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FLEIT, KAIN, GIBBONS, GUTMAN, BONGINI
& BIANCO P.L.
ONE BOCA COMMERCE CENTER
551 NORTHWEST 77TH STREET, SUITE 111
BOCA RATON, FL 33487

EXAMINER
SCHNURR, JOHN R

ART UNIT	PAPER NUMBER
2621	

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Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

	Application No.	Applicant(s)
Office Action Summary	10/765,455	LAGARDE, JEAN-PIERRE
	Examiner	Art Unit
	John R. Schnurr	2621

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>21 January 2004</u>.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-17</u> is/are pending in the application.

     4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1-17</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

     a)☒ All   b)☐ Some * c)☐ None of:

         1.☒ Certified copies of the priority documents have been received.

         2.☐ Certified copies of the priority documents have been received in Application No. _____.

         3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

     * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date <u>08/16/2005</u>.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____ .

1.   The information disclosure statement (IDS) submitted on 08/16/2004 was

considered by the examiner.

2.   Acknowledgment is made of applicant's claim for foreign priority under 35

U.S.C. 119(a)-(d). The certified copy has been filed in parent Application No.

10/765455, filed on 08/16/2004.

Claim Rejections – 35 USC 102

3.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4.   Claims **1, 2, 4, 5, 11, 12 and 17** are rejected under 35 U.S.C. 102(b) as being

anticipated by **Funahashi et al. (US Patent 5,612,681).**

> Consider claim 1, Funahashi et al. teach;
>
> A terminal for interactive telebroadcasting system conforming to at least one specified telebroadcasting standard **(Fig. 3 terminal 11)**, comprising:
>
> at least one unit for adaptation to a physical medium of a telebroadcasting standard **(branch 15, clock demodulator 25, data modem 22)**, the unit including:
>
> means for receiving **(branch 15)** a telebroadcast signal of the telebroadcasting standard so as to produce downstream information extracted from the telebroadcast signal **(the branch 15 diverges the character/image signals and the video/sound signals to the tuner 16, diverges the various data from the host CPU 1 to the data modem 22, and diverges the clock signals to the clock demodulator 25. Column 5 Lines 49-53)**;
>
> means for generating **(clock demodulator 25)** a transmission time base **(reference clock signal, Column 3 Line 13)** from the downstream information **(The clock demodulator 25 continually demodulates the**

clock signals into reference clock signals that are in synchronization
with the clock pulses generated at the control CPU 7 in the center S..
Column 5 Lines 54-57);

means for transmitting **(data modem 22)** a return signal, wherein the
return signal is clocked as a function of the transmission time base **(The
terminal control CPU 23 also controls the data modem 22 to
modulate and transmit various types of data, such as request data,
to the center S at timings of the reference clock signals. Column 6
Lines 3-6);** and

at least one control unit **(terminal control CPU 23)** including a calculation
unit having:

means for generating upstream information **(The CPU 23 also performs
to generate various data to be transmitted to the center S, such as
request data requesting transmission of desired data. Column 6
Lines 19-21)**, the calculation unit being clocked as a function of the
transmission time base. **(the terminal control CPU 23 can perform data
transmission and reception operation, at timings synchronized with
the clock pulses of the control CPU 7. Column 5 Lines 62-64)**

Consider claim 2, Funahashi et al. teach;

The terminal according to claim 1 **(Fig 2. terminals 11)**, further
comprising:

means for transmitting the transmission time base **(branch 15, clock
demodulator 25)** from the unit for adaptation to the physical medium
(branch 15, clock demodulator 25, data modem 22) to the calculation
unit **(terminal control CPU 23)** via a specified synchronization interface
protocol **(the branch 15 diverges the character/image signals and the
video/sound signals to the tuner 16, diverges the various data from
the host CPU 1 to the data modem 22, and diverges the clock signals
to the clock demodulator 25.
The clock demodulator 25 continually demodulates the clock signals
into reference clock signals that are in synchronization with the
clock pulses generated at the control CPU 7 in the center S. The
clock demodulator 25 outputs the reference clock signals to a
terminal control CPU 23. Column 5 Lines 49-58).**

Consider claim 4, Funahashi et al. teach;

The terminal according to claim 1 **(Fig. 3 terminal 11)**, further comprising:

means for transmitting the upstream information **(data modem 22, branch 15)** from the control unit **(terminal control CPU 23)** to the unit for adaptation to the physical medium **(branch 15, clock demodulator 25, data modem 22)** via a specified synchronous upstream data interface protocol **(The terminal control CPU 23 controls the data modem 22 to modulate the request data and to transmit the modulated request data to the transmission line 9 via the branch 15, at timings of the reference clock signals. Column 7 Lines 9-12. The upstream data interface protocol is inferred from the reference because in order to transmit data between the CPU and branch a specific protocol would be needed).**

Consider claim 5, Funahashi et al. teach;

The terminal according to claim 2 **(Fig. 3 terminal 11)**, further comprising:

means for transmitting the upstream information **(data modem 22, branch 15)** from the control unit **(terminal control CPU 23)** to the unit for adaptation to the physical medium **(branch 15, clock demodulator 25, data modem 22)** via a specified synchronous upstream data interface protocol **(The terminal control CPU 23 controls the data modem 22 to modulate the request data and to transmit the modulated request data to the transmission line 9 via the branch 15, at timings of the reference clock signals. Column 7 Lines 9-12).**

Consider claim 11, Funahashi et al. teach;

The terminal according to claim 1 **(Fig. 3 terminal 11)**, further comprising:

means for transmitting commands **(data modem 22, branch 15)** between the control unit **(terminal control CPU 23)** and the unit for adaptation to the physical medium **(branch 15, clock demodulator 25, data modem 22)**, via a specified synchronous control interface protocol **(The terminal control CPU 23 controls the data modem 22 to modulate the request data and to transmit the modulated request data to the transmission line 9 via the branch 15, at timings of the reference clock signals. Column 7 Lines 9-12).**

Consider claim 12, Funahashi et al. teach;

The terminal according to claim 4 **(Fig. 3 terminal 11)**, further comprising:

means for transmitting commands **(data modem 22, branch 15)** between the control unit **(terminal control CPU 23)** and the unit for adaptation to the physical medium **(branch 15, clock demodulator 25, data modem 22)**, via a specified synchronous control interface protocol **(The terminal control CPU 23 controls the data modem 22 to modulate the request data and to transmit the modulated request data to the transmission line 9 via the branch 15, at timings of the reference clock signals. Column 7 Lines 9-12)**.

Consider claim 17, Funahashi et al. teach;

A terminal for interactive telebroadcasting system conforming to at least one specified telebroadcasting standard **(Fig. 3 terminal 11)**, comprising:

at least one unit for adaptation to a physical medium of a telebroadcasting standard **(branch 15, clock demodulator 25, data modem 22)**, the unit including:

a receiver module **(branch 15)** for receiving a telebroadcast signal of the telebroadcasting standard so as to produce a downstream information extracted from the telebroadcast signal **(the branch 15 diverges the character/image signals and the video/sound signals to the tuner 16, diverges the various data from the host CPU 1 to the data modem 22, and diverges the clock signals to the clock demodulator 25. Column 5 Lines 49-53)**;

a time base generator module **(clock demodulator 25)** for generating a transmission time base from the downstream information **(The clock demodulator 25 continually demodulates the clock signals into reference clock signals that are in synchronization with the clock pulses generated at the control CPU 7 in the center S. Column 5 Lines 54-57)**;

a transmission module **(data modem 22)** for transmitting a return signal, wherein the return signal is clocked as a function of the transmission time base **(The terminal control CPU 23 also controls the data modem 22 to modulate and transmit various types of data, such as request data, to the center S at timings of the reference clock signals. Column 6 Lines 3-6)**; and

at least one control unit **(terminal control CPU 23)** including a calculation unit having means for generating upstream information **(The CPU 23 also performs to generate various data to be transmitted to the center S,**

such as **request data requesting transmission of desired data.**
Column 6 Lines 19-21), the calculation unit being clocked as a function of
the transmission time base **(the terminal control CPU 23 can perform
data transmission and reception operation, at timings synchronized
with the clock pulses of the control CPU 7. Column 5 Lines 62-64)**.

Claim Rejections – 35 USC 103

5.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

6.   The factual inquiries set forth in *Graham* v. *John Deere Co.*, 383 U.S. 1, 148

USPQ 459 (1966), that are applied for establishing a background for determining

obviousness under 35 U.S.C. 103(a) are summarized as follows:

1.   Determining the scope and contents of the prior art.
2.   Ascertaining the differences between the prior art and the claims at issue.
3.   Resolving the level of ordinary skill in the pertinent art.
4.   Considering objective evidence present in the application indicating
         obviousness or nonobviousness.

7.   Claims **3 and 6** are rejected under 35 U.S.C. 103(a) as being unpatentable over

Funahashi et al. (US Patent 5,612,681) in view of **Bernath et al. (US 6,526,070)**.

Consider **Claim 3**, Funahashi et al. clearly teach;

> The terminal according to claim 2 **(Fig. 3 terminal 11)**

However, Funahashi et al. does not explicitly teach;

> a counter which is clocked by a clock signal, a value of the counter and
> the clock signal being transmittable according to the synchronization
> interface protocol.

In the same field of endeavor, Bernath et al., containing user modem 11 which is analogous to the terminal of the application and time tag 652 which is analogous to the time base of the application, clearly teach;

> a counter which is clocked by a clock signal **(FIG. 9e illustrates the implementation of a local clock within the present embodiment [MCNS embodiment of Fig. 7]. 981 is a 32 bit counter whose output 32 bits 985 comprises the local time which is used by the system in generating time stamps. The 32 bit counter is clocked by Fclock 983 which is a local frequency generator within the system. Other embodiments may use various frequencies of Fclock 983 and various length bit counters 981 in order to satisfy the requirements of a particular implementation. Column 16 Lines 33-41)**, a value of the counter and the clock signal being transmittable according to the synchronization interface protocol **(The time tag generator 772 captures the value of the local clock 768 when the first byte of each frame arrives at the user modem, storing the value of the local clock as the time tag in memory 762. The computer 764 reads the contents of the messages from the memory 762 along with the time tags. Column 10 Lines 15-20)**.

Therefore, it would be obvious to a person of ordinary skill in the art at the time the invention was made to use the clock synchronization method of Bernath et al., using a counter, which is incremented by a clock signal, with the terminal of Funahashi et al. This method of clock synchronization allows efficient adjustment of upstream transmission timing in order to accurately schedule upstream transmissions, as taught by Bernath et al. Column 4 Lines 54-64.

Consider **Claim 6**, Funahashi et al. combined with Bernath et al., in the method of claim 3 above, clearly teach;

> The terminal according to claim 3 **(Fig. 3 terminal 11)**, further comprising:
>
> means for transmitting commands **(data modem 22, branch 15)** between the control unit **(terminal control CPU 23)** and the unit for adaptation to the physical medium **(branch 15, clock demodulator 25, data modem 22)**, via a specified synchronous control interface protocol **(The terminal control CPU 23 controls the data modem 22 to modulate the request data and to transmit the modulated request data to the transmission line 9 via the branch 15, at timings of the reference clock signals. Column 7 Lines 9-12. The upstream data interface protocol is inferred from the reference because in order to transmit data between the CPU and branch a specific protocol would be needed)**.

8.   Claims **7, 8, 10 and 13** are rejected under 35 U.S.C. 103(a) as being

unpatentable over **Funahashi et al. (US Patent 5,612,681)** in view of **Enns et al. (US**

7,002,971).

Consider **Claim 7**, Funahashi et al. clearly teach;

> The terminal according to claim 4 **(Fig. 3 terminal 11)**, wherein the control
> unit **(terminal control CPU 23)** further comprises:

However, Funahashi et al. does not explicitly teach;

> means for temporally clamping a delivery of the upstream information to
> the unit for adaptation to the physical medium by taking account of the
> part corresponding to an integer number of symbols of an offset
> parameter.

In the same field of endeavor, Enns et al., containing remote interface device 72
which is capable of bi-directional transmission, clearly teach;

> means for temporally clamping a delivery of the upstream information to
> the unit for adaptation to the physical medium **(When the remote devices
> receive a credit packet with a limited amount of credit, they transmit
> data packets on specified upstream channels until they have either
> used up their credit value or have run out of packets to send.
> Column 11 Lines 24-28)** by taking account of the part corresponding to
> an integer number of symbols of an offset parameter **(A credit packet is
> used to issue transmission credits to a remote device authorizing it
> to transfer a given amount of information. Column 8 Lines 10-12)**
> received in the downstream data **(upstream channel control is achieved
> by a polling mechanism through credit packets, CMD_CREDIT
> transmitted over the broadband downstream channel. Column 8
> Lines 14-17)**.

Therefore, it would be obvious to a person of ordinary skill in the art at the time
the invention was made to use the method of upsteam data transmission
disclosed in Enns et al. with the terminal disclosed in Funahashi et al. By
allowing each remote device to individually transmit upstream data to the
headend for a limited amount of time, based on a parameter received in the

downstream data, reduces packet collisions and provides a simple method of bandwidth allocation.

Consider **Claim 8**, Funahashi et al. clearly teach;

> The terminal according to claim 5 **(Fig. 3 terminal 11)**, wherein the control unit **(terminal control CPU 23)** further comprises:

However, Funahashi et al. does not explicitly teach;

> means for temporally clamping a delivery of the upstream information to the unit for adaptation to the physical medium by taking account of the part corresponding to an integer number of symbols of an offset parameter.

In the same field of endeavor, Enns et al., containing remote interface device 72 which is capable of bi-directional transmission, clearly teach;

> means for temporally clamping a delivery of the upstream information to the unit for adaptation to the physical medium **(When the remote devices receive a credit packet with a limited amount of credit, they transmit data packets on specified upstream channels until they have either used up their credit value or have run out of packets to send. Column 11 Lines 24-28)** by taking account of the part corresponding to an integer number of symbols of an offset parameter **(A credit packet is used to issue transmission credits to a remote device authorizing it to transfer a given amount of information. Column 8 Lines 10-12)** received in the downstream data **(upstream channel control is achieved by a polling mechanism through credit packets, CMD_CREDIT transmitted over the broadband downstream channel. Column 8 Lines 14-17)**.

Therefore, it would be obvious to a person of ordinary skill in the art at the time the invention was made to use the method of upsteam data transmission disclosed in Enns et al. with the terminal disclosed in Funahashi et al. By allowing each remote device to individually transmit upstream data to the headend for a limited amount of time, based on a parameter received in the downstream data, reduces packet collisions and provides a simple method of bandwidth allocation.

Consider **Claim 10**, Funahashi et al. clearly teach;

The terminal according to claim 7 **(Fig. 3 terminal 11)**, wherein the control unit **(terminal control CPU 23)** further comprises:

However, Funahashi et al. does not explicitly teach;

means for temporally clamping a delivery of the upstream information to the unit for adaptation to the physical medium by taking account of the part corresponding to an integer number of symbols of an offset parameter.

In the same field of endeavor, Enns et al., containing remote interface device 72 which is capable of bi-directional transmission, clearly teach;

means for temporally clamping a delivery of the upstream information to the unit for adaptation to the physical medium **(When the remote devices receive a credit packet with a limited amount of credit, they transmit data packets on specified upstream channels until they have either used up their credit value or have run out of packets to send. Column 11 Lines 24-28)** by taking account of the part corresponding to an integer number of symbols of an offset parameter **(A credit packet is used to issue transmission credits to a remote device authorizing it to transfer a given amount of information. Column 8 Lines 10-12)** received in the downstream data **(upstream channel control is achieved by a polling mechanism through credit packets, CMD_CREDIT transmitted over the broadband downstream channel. Column 8 Lines 14-17)**.

Therefore, it would be obvious to a person of ordinary skill in the art at the time the invention was made to use the method of upsteam data transmission disclosed in Enns et al. with the terminal disclosed in Funahashi et al. By allowing each remote device to individually transmit upstream data to the headend for a limited amount of time, based on a parameter received in the downstream data, reduces packet collisions and provides a simple method of bandwidth allocation.

Consider **Claim 13**, Funahashi et al. combined with Enns et al. in the manner of claim 7 clearly teaches;

The terminal according to claim 7 **(Fig. 3 terminal 11)**, further comprising:

means for transmitting commands **(data modem 22, branch 15)** between the control unit **(terminal control CPU 23)** and the unit for adaptation to the physical medium **(branch 15, clock demodulator 25, data modem**

22), via a specified synchronous control interface protocol **(The terminal control CPU 23 controls the data modem 22 to modulate the request data and to transmit the modulated request data to the transmission line 9 via the branch 15, at timings of the reference clock signals. Column 7 Lines 9-12).**

9.   Claim **9** is rejected under 35 U.S.C. 103(a) as being unpatentable over **Funahashi et al. (US Patent 5,612,681)** in view of **Bernath et al. (US 6,526,070)** and **Enns et al. (US 7,002,971).**

Consider **Claim 9**, Funahashi et al. combined, in the manner of claim 6 shown above, with Bernath et al. clearly teach;

The terminal according to claim 6 **(Fig. 3 terminal 11)**

However, Funahashi et al. does not explicitly teach;

means for temporally clamping a delivery of the upstream information to the unit for adaptation to the physical medium by taking account of the part corresponding to an integer number of symbols of an offset parameter.

In the same field of endeavor, Enns et al., containing remote interface device 72 which is capable of bi-directional transmission, clearly teach;

means for temporally clamping a delivery of the upstream information to the unit for adaptation to the physical medium **(When the remote devices receive a credit packet with a limited amount of credit, they transmit data packets on specified upstream channels until they have either used up their credit value or have run out of packets to send. Column 11 Lines 24-28)** by taking account of the part corresponding to an integer number of symbols of an offset parameter **(A credit packet is used to issue transmission credits to a remote device authorizing it to transfer a given amount of information. Column 8 Lines 10-12)** received in the downstream data **(upstream channel control is achieved by a polling mechanism through credit packets, CMD_CREDIT transmitted over the broadband downstream channel. Column 8 Lines 14-17).**

Therefore, it would be obvious to a person of ordinary skill in the art at the time the invention was made to use the method of upstream data transmission disclosed in Enns et al. with the terminal disclosed in Funahashi et al. By allowing each remote device to individually transmit upstream data to the

headend for a limited amount of time, based on a parameter received in the downstream data, reduces packet collisions and provides a simple method of bandwidth allocation.

10.   Claim **14** is rejected under 35 U.S.C. 103(a) as being unpatentable over

Funahashi et al. (US Patent 5,612,681) in view of **Schutte et al. (US Patent**

Application Publication 2003/0110511).

Consider **Claim 14,** Funahashi et al. clearly teach;

The terminal according to claim 1 **(Fig. 3 terminal 11)**

However, Funahashi et al. does not explicitly teach;

wherein the unit for adaptation to the physical medium is embodied in the form of an integrated electronic component.

In the same field of endeavor, Schutte et al., containing digital home communication device 16 which is analogous to the terminal of the application, clearly teach;

wherein the unit for adaptation to the physical medium **(The DHCT 16 preferably includes a communications interface 342 for receiving signals (video, audio and/or other data) from the headend 11 through the network 18 and for providing any reverse information to the headend 11 through the network 18. [0037])** is embodied in the form of an integrated electronic component **(supporting functionality described herein can be implemented in hardware, software, firmware, or a combination thereof, [0080])**.

Therefore, it would be obvious to a person of ordinary skill in the art at the time the invention was made to use an integrated electronic component for implementation of the communications interface. The use of integrated electronic components is beneficial because of their low cost and small size.

11.   Claims **15 and 16** are rejected under 35 U.S.C. 103(a) as being unpatentable

over **Funahashi et al. (US Patent 5,612,681)** in view of **Briggs (US Patent**

Application Publication 2004/0049796).

Consider **Claim 15**, Funahashi et al. clearly teach;

> The terminal according to claim 1 **(Fig. 3 terminal 11)**, wherein the
> calculation unit **(terminal control CPU 23)** for the generation of the
> upstream information **(The CPU 23 also performs to generate various
> data to be transmitted to the center S, such as request data
> requesting transmission of desired data. Column 6 Lines 19-21)**

However, Funahashi et al. does not explicitly teach;

> is a first coprocessor.

In the same field of endeavor, Briggs, containing set top terminal 300 and
processor 324, clearly teaches;

> is a first coprocessor **(upstream transmitter 314)**.

Therefore, it would be obvious to a person of ordinary skill in the art at the time
the invention was made to use the separate processor of Briggs to generate the
upstream data for the terminal of Funahashi et al. The use of a separate
component for upstream data generation reduces the load on the primary
processor and allows data to be processed more quickly.

Consider **Claim 16**, Funahashi et al. clearly teach;

> The terminal according to claim 15 **(Fig. 3 terminal 11)**, wherein the
> control unit **(terminal control CPU 23)** further comprises:

However, Funahashi et al. does not explicitly teach;

> a general-usage processor;
>
> a second coprocessor for processing the downstream data; and
>
> a shared memory, which are linked to the first coprocessor by a bus.

In the same field of endeavor, Briggs, containing set top terminal 300 and
processor 324, clearly teaches;

> a general-usage processor **(processor 324)**;

> a second coprocessor **(tuner system 312)** for processing the downstream data **(tuner system 312 for extracting desired data from signals received by the communications interface 311 [0038])**; and
>
> a shared memory **(memory 330)**, which are linked to the first coprocessor by a bus **(local interface 310)**.

Therefore, it would be obvious to a person of ordinary skill in the art at the time the invention was made to use the hardware configuration of Schutte et al., a main processor, a processor for down stream data and a shared memory all connected by a system bus, with the terminal of Funahashi et al. This hardware configuration improves the terminal of Funahashi et al. by removing some tasks from the main processor allowing the system to process data more quickly.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to John R. Schnurr whose telephone number is (571) 270-1458. The examiner can normally be reached on Monday - Friday, 7:30am to 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Edouard can be reached on (571) 272-7603. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JRS

PATRICK N. EDOUARD
SUPERVISORY PATENT EXAMINER